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ORIGINAL ARTICLES.

SARCOMA OF THE ORBIT EXTENDING INTO THE CRANIAL CAVITY.

BY DR. S. C. AYRES, CINCINNATI, OHIO.

HISTORY OF THE CASE.

M. C., æt. 34, came under my observation in March, 1891. He had at that time a slight exophthalmus of the right eye. The motility of the eye was unimpaired and evidences of a tumor could not be felt with the tip of the finger around the rim of the orbit. Vision was 0.4 and with + cylindrical plus 0.7. The disc was somewhat pale. In two weeks there was a marked increase in the exophthalmus and vision was reduced to 0.1 and the disc was decidedly blurred. After this I did not see him for eight months. In the meantime an operation had been performed for the removal of the growth. An attempt had been made to save the globe which was not successful. Panophthalmitis followed and he said that his sufferings were intense. The orbit was now filled with a hard nodular mass which advanced slowly. His general condition

was very bad, digestion and assimilation impaired, and he suffered severely with pain in the back part of the head. Three months later, Jan., 1892, the tumor showed considerable increase. Five firm nodules could be seen above the rim of the orbit. There was also considerable swelling below the malar bone and apparently in the antrum. He suffered excruciating pain in the occipital region and the cervical portion of the spine was very tender to pressure. Tongue red and dry at times. There was some difficulty in deglutition and he complained of a sensation as if there was something pressing downward from the right side of the vault of the pharynx. He had also at this time paralysis of the *right* arm which he said had existed for the past two months. There was also total loss of sight of the left eye. This came on about three weeks after the paralysis of the right arm. The pupil was widely dilated. There was no swelling of the disc, or evidence of neuro-retinitis—on the contrary, the disc was pale and atrophied. The loss of vision had come on very rapidly. He was very much emaciated but was able to take nourishment quite well. The pain in the head was more severe than formerly and in order to secure rest he required two hypodermic injections of morphine daily. There was an elevated and tender ridge on the skull following the line of the coronal suture and extending to the sagittal suture. The scalp was reddened along its course. The outer right half of the skull was tender to pressure. His intellect remained perfectly clear until the day of his death. Emaciation continued and he died about thirteen months after the first examination.

POST-MORTEM EXAMINATION.

Upon examination of the head and the cranial cavity there is seen a prominent ridge extending from the upper anterior portion of the temporal bone downward and forward to the upper and outer angle of the right orbit. To the touch this line was more or less rough and irregular and was of variable width, its widest part being about three-eighths of an inch

broad. Upon removing the scalp from the calvarium, the right anterior portion of the frontal bone and the anterior portion of the right parietal bone were found to be much softened and of a reddish color, and covered with what appeared to be a thick granulation tissue. The point of a knife could be made to penetrate this bone without much difficulty. Upon opening the cranial cavity in the usual way, the dura was found to be very adherent over a large extent of surface which corresponded exactly to the discolorated and softened portion of the bone. By much exertion, however, the parts were forced, and the inside of the bone was found to be covered with the same peculiar growth as the outside, and thicker.

The whole inner surface was extremely vascular. The dura was found very much roughened over the whole right half and this roughened appearance stopped sharply at the median line. The left half was normal in appearance. Upon endeavoring to remove the dura from the underlying structure it was found to have become firmly united over an extent covering the whole of the left half of the cerebrum, but by using considerable force, it was removed bringing with it portions of the underlying tissue. Upon examination there were seen covering this half of the dura, numerous thick and rough fragments of the growth, more of them appearing on the anterior portion than on the posterior; indeed the center of activity, so far as the bone and the membrane are concerned, appears to have been localized over the frontal convolutions. The cerebellar dura was normal. The other membranes appeared normal except in the locality above mentioned. Upon examining the brain itself, it was found to be normal in every respect, excepting the anterior half of the right hemisphere. Here in the area occupying all of the third and part of the second frontal convolutions and the anterior portion of the temporal lobe, are found very intimate adhesions, extending between them and a mass of tumor which pressed them forward and separated them from the underlying floor of the cranial cavity. The tissues here, both cerebral and neoplastic, were intimately bound together by numerous bands of connective tissue.

The cerebral substance itself, however, appears not to be involved and by a little force the tumor can be separated from the brain.

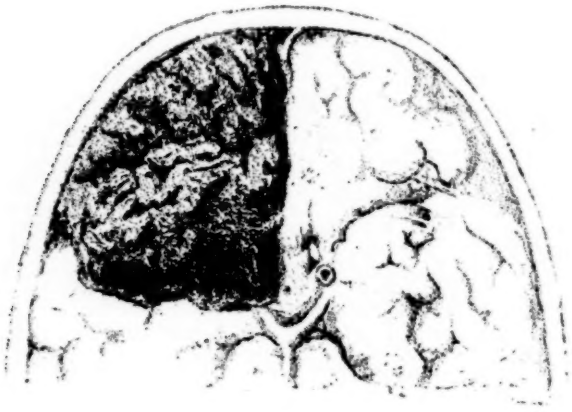

FIG. 1.—Appearance of the Tumor from a Drawing.

FIG. 2.—Portion of the Dura Mater Showing the Growth on its Surface.

By exerting a good deal of force the brain and tumor were removed from the cranial cavity, when it was found that the growth extended forward and outward into the orbit and that it had absorbed a portion of the roof of the same. The whole of the right side of the sphenoid bone, the right side of the

horizontal plate of the frontal, the anterior portion of the squamous part of the temporal, all were very much softened and involved by the new growth, which also extended along the course of the optic nerve into the orbital cavity which it completely filled.

This cavity was filled by a hard unyielding mass of tumor tissue, in which lay the stump of the right eye, which had at some time previous been the seat of panophthalmitis, as above stated. The orbital floor was also involved and the antrum Highmorii was also the seat of some of the tumor tissue and was filled with a semi-purulent fluid. The tumor itself is dark yellowish gray in appearance, very firm and resistant.

MICROSCOPIC EXAMINATION.

The microscopic examination was made by Dr. R. C. Heflebower.

Microscopically the tumor resolves itself into a fibro-sarcoma, in which the fibrous elements greatly predominate. In fact, the chief mass of the tumor is composed of bundles of fibrous tissue closely pressed together, with a sparse number of round cells more or less regularly arranged in rows running parallel to the direction of the fibrous tissue. As a rule, these round cells are of about the same size and appearance, but here and there may be seen cells assuming a spindle-shape, or a fully developed spindle.

In some parts of the tumor, however, the fibrous material is not placed in layers, but is formed by fibrous tissue curled and twisted together in a very irregular manner, and containing proportionately a larger number of round cells, than is found where the arrangement is more conventional.

In spite of the density of the tumor, there are numerous small vessels in every part of it, and these are all quite filled with blood. These are very simple in their structure, and consist of a thin, transparent wall, which separates the blood stream from the surrounding tissue. In that part of the tumor where there is a regular arrangement of the fibrous bundles,

the vessels also assume the general parallel course being, like the rows of round cells, interposed between the fibrous layers. In the irregular arrangement the vessels assume no definite course, and ramify with much greater frequence than in the other portion.

The ocular muscles present one of the most interesting microscopical pictures connected with the case. The sheath of the muscle remains comparatively unchanged, except that it is considerably thickened; but the general histological features are unaltered. The muscular substance itself, however, is entirely unrecognizable, and its place occupied by the tumor in the round and spindle-celled form. The round cells here are a trifle larger than in the tumor proper, and every form of transition from round to spindle-cell is clearly shown. The fibrous material is very scarce, and occurs mostly at some point near the muscle sheath.

Vessels are also numerous in the muscle, but present the same appearance as in the general tumor-mass, except that they are larger, their calibre more irregular, and the histological arrangement of the wall more clearly defined. In places, branches of the nutritive vessels of the muscle can be seen, with walls enormously thickened and infiltrated with cells of both the round and spindle variety.

Nowhere, however, can any trace or suspicion of muscular tissue be found.

REMARKS.

There are some interesting points in relation to this case and the first one I would mention, is the apparent arrest of the forward growth of the tumor: At the time of the patient's death the orbit was filled with a nodular mass of very hard and inelastic consistency. It was not painful to pressure. During the last eight months of the patient's life the orbital portion of the tumor grew *very* slowly, but it is probable that that portion behind the orbit advanced steadily. The general constitutional symptoms were very severe and the pain so acute that

for months liberal doses of morphine had to be administered. Bramwell says "that slow growing encapsuled sarcomata produce atrophy rather than irritation of the brain tissue with which they come into contact; in such cases the general symptoms may be very severe, but in localizing indications slight or altogether absent."

The functions of the brain here were not interfered with in the least, but the brain tissue in contact with the growth was altered by mechanical pressure. The very pronounced softening of the roof of the orbit and of the right side of the sphenoid and the right side of the horizontal plate of the frontal and the anterior portion of the squamous part of the temporal would indicate that, if the tumor originated in the orbit, it perforated the bone very soon and then invaded the surrounding bony tissues.

ON TROPA COCAINE, THE LOCAL ANÆSTHETIC.

BY ADOLF ALT, M.D., ST. LOUIS.

The new alkaloid, according to *Merck's Notes on New Remedies* (December, 1892), was isolated by Giesel from the nar row-leafed coca plant of Java. Liebermann who examined it chemically pronounced it to be benzol-pseudo-tropeine. By hydrolysis it was decomposed into benzoic acid and pseudo-tropeine, the latter body being chemically identical with the pseudo-tropeine from hyoscyamus niger. Its close connection with the tropeine group and atropine, concerning which Ladenburg's clinical researches have discovered so much, was established. The reconstruction of the alkaloid under consideration from its products of decomposition, benzoic acid and pseudo-tropeine, in the same way as cocaine is prepared

from benzoic acid and ecgonine, also recalls its relation to the latter alkaloid. To avoid the cumbrous systematic name, and to recall its chemical relations as well as its occurrence in a coca species, the name tropa-cocaine has been given to it.

Chadbourne's experiments on animals and his experience as well as that of Schweigger, Silex and others, on human subjects have shown that tropa-cocaine is a powerful local anæsthetic. Its action resembles that of cocaine, but it is not identical with it. It does not cause the ischæmia of true anæsthetics like cocaine, nor the irritation and hyperæmia of Liebreich's group of anæsthetics Compared with cocaine, tropa-cocaine is much less toxic, since it exerts much less of a depressing action on the cardiac motor ganglia and on the heart's muscle. Local anæsthesia is completed much more quickly and continues longer (? Edit.). In the eye hyperæmia is occasionally caused by it, but it quickly disappears; mydriasis occurs, but not as a rule, and it is always less than after cocaine. In ophthalmic practice, tropa-cocaine appears in most cases equal to, and in some superior to cocaine. At any rate it appears to have a great future in this direction. Those who have tried it, prefer its employment in the removal of foreign bodies from the cornea. Schweigger did a painless iridectomy in less than two minutes after the instillation of tropa-cocaine, and a tenotomy within half a minute after, which was reported as painless.

The solution used in the experiments described above seems always to have been one of three per cent. It is, furthermore, claimed for this solution that it has a slightly antiseptic quality and that its anæsthetic action does not spoil with age, as it is said of cocaine-solutions.

Through the kindness of my friend, Dr. O. Curtman, Professor of Chemistry in the Missouri Medical School, I received fifteen grains of hydrochlorate of tropa-cocaine, which was generously given for experimentation by the owners of the Mallinckrodt Chemical Works of St. Louis and New York.

A three per cent. solution of this salt I have for a month used in my practice in all cases in which I have been accustomed

to instill cocaine. The results of these experiments are the following:

The instillation of one drop of this solution causes in the vast majority of the patients momentarily a very pronounced irritation, with considerable hyperæmia of the blood-vessels, and sometimes pain and profuse lachrymation. These symptoms, although in themselves trifling, are so different from the sensation which a four per cent. solution of cocaine produces, that most of my patients spontaneously asked, what new medicine I had instilled.

Total anæsthesia of the conjunctiva and cornea is reached in some cases in half a minute in others it takes a minute or more. When no second drop is instilled this anæsthesia begins noticeably to wane after about six minutes, but is rapidly re-established by a new instillation.

I have never seen any general toxic symptoms from repeated instillations and subcutaneous injections.

Foreign bodies can be quickly removed from the cornea after the instillation of one drop of the solution.

The application of caustics to the conjunctiva causes less pain than it does after cocaine, neither does the pain seem to last as long.

In operations on the eyeball my experience has not been as brilliant as that of former exporimenters. Several patients on whom I made tenotomies of the external muscles felt the pain very keenly when the tendon was cut. In iridectomies the cutting of the cornea was painless but the cutting of the iris was felt painfully. I used tropa-cocaine in one case of simple cataract extraction and I shall not use it again. The hypotonus which is produced by cocaine anæsthesia, I have always looked upon as a great help in cataract extraction and a barrier against prolapse of the vitreous body. In this case of cataract extraction with tropa-cocaine no hypotonus existed, rather perhaps an increase of tension, at any rate the easy expulsion of the lens was at once followed by a small prolapse of the vitreous body, an accident which has not occurred to me in years. In several cases of ulcers of the cornea the

galvano-cautery seemed to be felt more painfully, than with cocaine.

Tropa-cocaine is, from all this, undoubtedly a strong local anæsthetic. However, I do not see that it is greatly superior to cocaine in ophthalmic practice, unless it be for its quickness of action. In surgical operations where local anæsthesia can be produced by repeated subcutaneous injections its comparative freedom from toxic properties is likely to render it more valuable than cocaine.

The price of tropa-cocaine is given at $5.00 per gram (grs. 15), which in comparison with the small advantages which it has over cocaine, is rather against the general use of this drug.

A CASE OF RECURRENT EPITHELIOMA FINALLY REMOVED BY GALVANO-CAUTERY. NO RELAPSE AFTER THREE YEARS. PREVIOUS TO THIS, SYMPATHETIC NEURO-RETINITIS.

BY ADOLF ALT, M. D.

The history of F. D. B., aside from the epithelioma of the cornea and as far as I have had occasion to observe the case, is interesting enough to report it in full.

On April 19, 1881, F. D. B., a Pullman car conductor, 38 years old, consulted me for the first time on account of dimness of vision in his left eye and pain in the phthisical right eye. The right eye had been lost 25 years previously by an injury which was followed by a severe, painful and long continued inflammation, finally ending in phthisis of the eyeball.

On the remaining stump he had worn an artificial eye which was not well borne and had frequently to be removed on account of new inflammatory attacks. With the last inflammatory attack, which had begun ten days previous to his visit, vision in his left eye had become blurred and was now reduced to $^{20}/_{L}$. This eye showed a marked degree of optic neuritis and retinitis, the pupil acted sluggishly and there was photophobia, photopsia and lachrymation. This evident sympathetic neuro-retinitis was cut short by the prompt enucleation of the painful and shrunken right eyeball. On April 29, vision $^{20}/_{XXX}$, and all other symptoms had disappeared except a slight tortuosity of the retinal veins. The enucleated eyeball contained a small piece of stone embedded in a cyclitic membrane. In the detached retina I found three cysts.

On May 29, F. D. B. called on me again on account of blurred vision. I found V.=$^{20}/_{LXX}$, disk and retina hyperæmic, and a keratitis in stripes. He had been wearing an artificial eye since the removal of the stump. The artificial eye was now removed and leeches to the left temple were applied, iodide of potassium given internally and the patient was kept in the dark. Under this treatment all symptoms disappeared again and vision rose to $^{20}/_{XXX}$.

On November 21, 1886, F. D. B. called on me again on account of a small growth at the corneo-scleral margin in the lower outer quadrant, which he had observed growing slowly for about five months. It now seemed to interfere with vision The tumor, which was quite vascular, was about as large as a small split pea, and two-thirds of it lay on the sclerotic, while about one-third encroached upon the corneal tissue. I removed the tumor with the knife. On examination it proved to be an epithelioma. (Patient was then 43 years old). The wound healed readily, and he was ordered to call from time to time to be examined, which he did for about six months. During this time a slight vascularity around the scar was all that could be seen. He did not put in an appearance again until May 19, 1888. I now found a flat tumor which grew altogether on the cornea, and was but slightly larger than the

corneal portion of the original tumor. I again dissected it off carefully and scraped the wound-surface. The patient was in a very bad condition generally, looked cachectic and complained of pain in the abdomen. The liver was considerably enlarged. On account of this condition he had given up work and was going to take a rest. I supposed it would soon be a final one. The wound from the operation healed very promptly.

On May 25, 1890, he returned very considerably improved in his general health, but with the corneal tumor grown again. The flat, somewhat vascular tumor, now covered the lower outer quadrant of the cornea and encroached sufficiently upon the pupillary area to interfere with vision. I now decided to remove the tumor by means of galvano-cautery, to which he promptly consented. The burn was, of course, quite extensive, and during the healing period his sight was very poor; but after the heafing was complete sight was considerably improved. I have seen him a number of times since, the last time a few weeks ago, when he came to get new glasses correcting his presbyopia. There is now no sign of any former trouble. The localized injection which had remained after every previous removal has totally disappeared; the cornea is so clear that only with oblique illumination a slight dimness in the lower outer quadrant can be made out. Vision with + 1 D=$^{20}/_{XX}$. His general health seems to be satisfactory.

Judging from a number of similar cases, some of which I have, however, not been able to observe for so long a time, I am satisfied that galvano-cautery is the best means we have in hand to remove corneal and episcleral tumors lastingly, although I have, like others, perfectly succeeded in a number of cases with the knife.

CORRESPONDENCE.

ARTIFICIAL EYE-SHELL.

Editor AMERICAN JOURNAL OF OPHTHALMOLOGY.—The following may be of interest to you and the readers of your valuable journal. In your March number, 1886, is an article from Dr. Pooley, of New York, regarding the use of an artificial eye-shell, made of glass, in symblepharon. I presume further use of this appliance has been reported upon in other cases, but I have failed to note them. At the time of reading the doctor's article, I had already planned a somewhat similar procedure. In came in a little different manner. It was not to correct a symblepharon, but to prevent one. The method exceeded my expectation, and is new as far as the writer knows.

A farmer was sent by a neighboring physician for treatment of an inflamed right eye, supposed to be due to a cold.

After two days of observation, for there was absolutely no history, the diagnosis, infection from kine-pox, was fully established, and several physicians concurred in this opinion.

The characteristic pustule developed upon the far edge of the lids and the external surfaces of the upper lid. The mucous surfaces of the lids and eyeball were studded with vesicles. The cornea however was intact, and vision was not impaired. Ordinary treatment was pursued for three days. During this time the vesicles ruptured with consequent general adhesions of the lids to the eyeball. These were broken up at frequent intervals, and an elevator given the friends to use as often as possible. The surfaces became raw, granular, bleeding and

enormously swollen. Necrosis of the cornea was imminent and probably enucleation. At this time the following procedure was adopted: A dentist was called in, who made a cut of the eyeball as near as possible, and upon this a vulcanized rubber shell was made. So much of the shell as corresponded with the cornea was removed, leaving a collar which was inserted with instructions to remove the shield twice a day, for the purpose of cleansing both, the eye and the instrument. In ten days there was no further use for the shield and the patient has made a complete recovery free from adhesions. Passing the suggestion that will readily occur to any expert I think it safe to say that the eye is more tolerant of rubber than glass; that it is quickly available and at small cost, and further, that it is not necessary to keep an assortment. Very respectfully,

Oshkosh, Wis., May 3, '93. W. H. SEARLES, M.D.

ARTIFICIAL EYES.

EDITOR AMERICAN JOURNAL OF OPHTHALMOLOGY.—We beg to inform you, that our Mr. A. C. Müller of the Firm of F. Ad. Müller Söhne, manufacturers of artificial eyes, Wiesbaden, Germany, will be at Chicago from the 5th of July to the 1st of October, a. c., for the purpose of making artificial eyes directly from nature. His residence will be in the house of P. R. Welcker, M. D. 2459 Prairie avenue; telephone, South 917.

Our artificial eyes are universally known and appreciated.

Our principal aim is to manufacture artificial eyes directly from nature; to obtain such eyes the patients generally come here to Wiesbaden or call on us, by order of their oculist, during the tour, which one of the chiefs of the house makes every year through Germany and the principal cities of the continent.

On these tours we carry all machines and materials necessary to manufacture artificial eyes and we are, therefore, able to guarantee to the patient, even in the most difficult cases like difformity of the orbit by a burn, or injury, a perfectly fitting eye.

The eye is made in the patient's presence and for its manufacturing only a few hours are required.

In consideration of the above mentioned facts, we beg to call your attention to Mr. Müller's presence in Chicago.

You may be sure, Mr. Müller will do his best to merit the honor of your recommendation by a conscientious standard work.

You are kindly invited to visit the ambulant eye-factory which will be of especial interest to you as an oculist.

Yours Respectfully F. AD. MÜLLER SÖHNE.

SOCIETY PROCEEDINGS.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

THURSDAY, MAY 4TH, 1893.

HENRY POWER, M.B., F.R.C.S., President, in the Chair.

A PECULIAR CASE OF MEMBRANOUS CONJUNCTIVITIS.

Dr. Bronner (Bradford) read notes of the case of a man aged 43, who had been the subject of recurrent attacks of iritis. After a recent attack the lids of the right eye became swollen, red and œdematous, and there was muco-purulent conjunctival discharge. When next seen a thick greyish-white membrane was found adherent to the conjunctival surface of both lids. which covered the eyeball anteriorly, although not adherent to it, and closed the palpebral fissure. On puncturing the membrane, a thick yellowish fluid escaped. Bleeding occurred when the membrane was separated from the lids. The ocular conjunctiva was red and somewhat swollen, and there was some peripheral ulceration of the cornea. The membrane reformed after one removal, but on detaching it a second time and applying nitrate of silver to the conjunctiva no further membrane developed. The ulceration of the cornea was cured by the use of the galvano-cautery. There was no history of diphtheria, croup, or gonorrhœa, and no characteristic micro-organisms could be found in the membrane.

THE RELATION BETWEEN VISUAL ACUITY AND VISUAL EFFICIENCY.

Dr. G. A. Berry (Edinburgh) read this paper. He pointed out the varying degree of visual acuity required in carrying out different trades, apart from the superfluous acuity brought into play in the general relations of life. Where sight was injured the loss to the individual was not always commensurate with that found by the ordinary standard of subjective examination. Taking the average acuity of the two eyes as expressing the amount of vision, Zehender regarded the total loss of one eye as reducing the vision to $^2/_3$, and not to $^1/_2$. The author considered that for a given amount of loss the distribution of visual defect over both eyes was less disadvantageous than its concentration in one, and in this he differed from Zehender. The advantage which bilateral vision possessed over unilateral, even when partial, consisted in (1) the greater area of the field of vision; (2) the better appreciation of the third dimension; (3) the smaller risk of complete blindness. Dr. Berry estimated that the loss of accurate appreciation of the third dimension crippled vision to the value of at least $^1/_6$. The limitation of the field by loss of one eye might be estimated at a similar amount, together amounting to Zehender's estimate of $^1/_3$. In complete homonymous hemianopsia the loss was not actually 50 per cent., but about the same as the loss of one eye, namely, $^1/_2$.

PASSAGE OF LEADEN PELLET THROUGH EYEBALL WITH RETENTION OF PERFECT SIGHT.

Mr. Simeon Snell (Sheffield) related this case. A youth had been shot in the right eye by a pellet from an air gun, the wound of entrance being in the sclerotic, on the nasal side, above the insertion of the internal rectus. When seen two hours after the accident, some vitreous had escaped through a round hole about four millimetres in diameter in the sclerotic, and the interior of the eyeball was filled with blood. Next

day the eye looked better. The vitreous cleared, and a hæmorrhage close to the optic papilla underwent absorption, disclosing a pigmented scar (wound of exit). Vision soon improved, and reached $^{6}/_{IX}$ and J. 1. The ophthalmoscope revealed a large atrophic area with pigment, especially at the edges, in the position of the wound in the sclera through which the pellet entered, and there was a corresponding gap in the perimetric chart. The place of exit was, as indicated, close to the disc. The date of accident was August 30, 1892, and the sight remained good at the time of writing.

NÆVUS OF THE PLICA SEMILUNARIS AND TWO CASES OF NÆVUS OF THE CONJUNCTIVA.

Mr. S. Snell related these cases: (1) A girl, aged 20, was the subject of nævus of the lip (left) inside of the mouth and the palate. She had been born with it in her lip. For this she had undergone successful treatment. The appearances in the eye only came on two years ago. The nævus in the plica was about the size of a small bean; it projected somewhat between the eyelids: the caruncle was not much affected, but showed some enlarged vessels on its surface. The tumor was painted with ethylate of sodium with marked success; it indeed disappeared. (2) A baby, aged $4^{1}/_{2}$ months. The conjunctiva was involved by a series of nævoid vessels on the upper and inner side; associated with this was a nævus in the orbit atthe upper and inner angle. The conjunctival nævus was treated with ethylate of sodium with good effects: not only was the conjunctival part greatly benefitted, but the orbital nævus appeared also decidedly improved. (3) A woman, aged 30, with a history of injury—a poke with a pointer in early childhood. The present tumor had existed for a long period, but it was uncertain if it had got worse lately. Above the cornea, involving and really under the conjunctiva, was a rounded nodulated tumor like a blackberry in size, color and form. It was of a dull livid color, brighter at parts. It was dissected out; it was found to be an angioma with a good deal of fibrous tissue;

two small calcareous nodules were found in it. (Water-color drawings of these cases were shown).

TWO CASES OF BLINDNESS, ONE BILATERAL, RESULTING FROM FACIAL ERYSIPELAS.

Mr. Snell also read particulars of these cases. The first occurred in a man, aged 48. The attack had chiefly affected the left eye and side of face. As the erysipelas subsided the left eye was found to be blind. When seen at the end of five weeks the left optic papilla was hazy and pale, and the arteries small; there was no perception of light. The other case was in a man, aged 53. The erysipelas affected both sides of the face and right arm; there was a good deal of swelling about the face and eyes. When he was able to open his eyes he found himself quite blind. When seen ten weeks later, not the faintest light perception existed in either eye; both pupils widely dilated; papilla on left side smudgy and passing into atrophy; arteries perceptibly lessened in calibre; veins less altered; right optic disc partly covered by a hæmorrhage, but was apparently undergoing the same changes as the left. At a later date extensive hæmorrhages took place into left vitreous, which prevented details of the fundus being noted; in the right the disc was ill-defined, owing to a hæmorrhage partly covering it; a vessel which could be traced a little way from the disc was filled with dark blood; very few vessels were visible; those seen looked like lines, some dark looking hæmorrhages were visible in the retina at the periphery, and some in the vitreous also. Mr. Snell remarked that there appeared to be (Knapp) in all cases in which blindness came on during the erysipelatous attack, evidence of orbital cellulitis, however slight. It probably occurred in these cases. He thought that pressure by the orbital tissues was not always enough to account for the conditions found. Possibly the peculiar poison of erysipelas promoted a condition of the vessels favorable to the formation of thrombi.

DOUBLE OPTIC ATROPHY FOLLOWING ERYSIPELAS OF ONE SIDE OF THE FACE.

Dr. Scougal (Huddersfield) recorded this case, which occurred in a man aged 60. There was no direct evidence of orbital cellulitis, no brawniness of the affected area, which comprised the right malar, supra-orbital and temporal regions. There was no affection of vision during the erysipelas, no complaint being made till five weeks after. The case was peculiar also, because while the erysipelas was one-sided, the atrophy was double. Dr. Scougal had not been able to find any similar case recorded. The absence of any sign of orbital cellulitis was also noteworthy, as Knapp[1] stated his belief that in all cases of amblyopia following erysipelas cellulitis had occurred The prognosis of such cases, as regarded recovery of vision was not at all hopeful.

Mr. Hill Griffith (Manchester) asked if the optic atrophy might not be independent of the erysipelas, and inquired if there were any symptoms of spinal cord or brain disease.

Mr. Snell thought Dr. Scougal's case scarcely belongs to the ordinary class of cases in which optic atrophy was caused by erysipelas.

Dr. Scougal, in reply, said that his patient was a perfectly healthy man, and had no symptoms of spinal cord disease. He suggested that optic neuritis might have been present during the erysipelatous attack, but that no defect of vision was evident till the nerves became atrophic.

TWO CASES OF COMPLETE DETACHMENT OF THE CHOROID.

Dr. Mules (Manchester) read brief notes of these cases. The first occurred in a boy aged 12. The separation of the choroid was complete; this was verified by dissection after removal of the globe. No cause for the condition was discovered. The second case was that of a youth aged 19, whose eye had been injured by a poke with a finger. The eye was not removed. The case differed from those previously recorded in

that in the first the vascular system of the choroid could not be seen at any time, although the media were clear; the appearances were thought to be those of white sarcoma. In the second the choroidal vessels were visible at first, but were afterwards obscured by lymph, and then closely resembled the first case.

PYRAMIDAL CATARACT.

Dr. Mules also reported a case of pyramidal cataract, in which lymph bands stretched from the apex of the opaque cone to the edge of the corneal scar. These appearances persisted for sixteen months, at which time the eyeball was excised.

LIVING AND CARD SPECIMENS.

Mr. S. Johnson Taylor, Intraocular Growth of Unusual Nature; Messrs. Hartridge and Griffith, Microscopic Sections of Leucocythæmic Retinitis; Mr. A. S. Morton (1) Case of Persistent Membranous Conjunctivitis; (2) Hereditary Nightblindness without Ophthalmoscopic changes; Mr. Adams Frost, Coloboma of Iris and Choroid on Temporal Side; Mr. Doyne, Drawing of Changes in the Macular Region after Injury to the Eye by a Chip of Metal.

NEWS.

MEETING OF THE AMERICAN MEDICAL ASSOCIATION AT MILWAUKEE.—SECTION OF OPHTHALMOLOGY.

The following program is announced:

1. Pannus and Its Treatment by Digestive Ferments, by J. A. Lydston, Chicago.

2. Hypertrophic Conjunctivitis and Its Treatment, by Cornelius Williams, St. Paul.

3. Phlyctenular Ophthalmia, by Dudley S. Reynolds, Louisville.

4. The Total Correction of Refractive Errors, by W. F. Coleman, Chicago.

5. (a) History of a Case of Successful Extraction of a Piece of Steel from the Vitreous by Aid of the Electro-Magnet. (b) Study of a Case of Hæmorrhagic Glaucoma and Microscopic Sections, by Chas. A. Oliver, Philadelphia.

6. Glaucoma, by L. F. Love, Philadelphia.

7. Unilateral Neuro-Retinitis, With Report of Cases, by B. L. Milliken, Columbus, Ohio.

8. Tobacco Amblyopia, by F. Dowling, Cincinnati.

9. Sympathetic Ophthalmia, bp A. Hobby, Iowa City.

10. A Study of the Etiology of Blindness of Pupils in the Various State Asylums, by G. F. Keiper, Lafayette, Ind.

11. Skin Grafting in Malignancy of the Eyelids and Orbit, by Flavel B. Tiffany, Kansas City.

12. Treatment of Granular Lids; Exhibition of Instruments, by C. B. Blubaugh, Parkersburg, W. Va.

13. Exostosis of the Orbit, by Robert F. LeMond, Denver.

14. Some Rare Forms of Tumors of the Orbit and Eyelids, by J. Schneider, Milwaukee.

15. Strabismus Convergens, When and how shall We Operate? by S. C. Ayres, Cincinnati.

16. Rapid Dilatation of the Lachrymal Sac, by S. L. Ziegler, Philadelphia.

17. Cataract Lenses, by H. V. Wurdemann.

18. Albinism of Eyes, by G. G. M. Gould, Philadelphia.

19. Commentaries on Diseases of the Lachrymal Passages, by H. Gradle, Chicago.

20. Posterior Sclerotomy as a Preliminary to Some Operations for Glaucoma, by H. Gifford, Omaha.

21. Two Cases of Brain Tumor, Where Optic Neuritis was the Only Positive Sign; Autopsies, by E. P. Morrow, Canton, Ohio.

22. The Curvilinear Reflection of Weiss as a Prodromal Sign of Myopia, by B. Alex, Randall, Philadelphia.

23. Intra-Ocular Injections of Various Antiseptics, by G. E. DeSchweinitz and H. A. Aare, Philadelphia.

24. Purulent Ophthalmia from the Standpoint of Specific Microbe Cause, by A. Hare, Chicago.

25. Relation of Diseases of the Upper Air Passages to Diseases of the Eye, by J. G. Carpenter, Stanford, Ky.

26. A Case of Sympathetic Neuritis after Evisceration, by F. C. Hotz, Chicago.

27. Treatment of Nasal Duct Obstruction, by Casey A. Wood, Chicago.

28. (a) The Best Form of Rod and Rotary Prism Tests with a New Phorometer; (b) Classification of Diseases of the Eye in Hospital Statistics, by E. Jackson, Philadelphia.

29. Squint and Its Treatment, by J. H. Thompson, Kansas City.

30. The Artificial Ripening of Immature Cataracts, by B. Bettman, Chicago.

31. Meningitis Following Enucleation of the Eyeball, by S. D. Risley, Philadelphia.

32. Legislation in the United States for the Prevention of Blindness, by L. Howe, Buffalo.

33. The Results of the Use of the Electromagnet for the Extraction of Foreign Bodies, by C. Barck, St. Louis.

34 Quiescent Foreign Bodies Within the Eyeball, by W. B. Johnson, Patterson, N. J.

35. Some Practical Experiences with Muscular Anomalies, by T. E. Murrell, Little Rock, Ark.

36. Persistent Spasm of the Accommodation Relieved by Tenotomy of the External Recti, by A. R. Baker, Cleveland.

37. Cataract Extraction in a Negro said to be 116 Years Old, by F. Trester Smith and B. F. Travis, Chattanooga, Tenn.

38. The Practical Value of the Ophthalmometer in the Measuring of Astigmatism, by L. J. Lautenbach, Philadelphia.

39. Pterygium—Presentation of Instruments, by A. Blitz, Indianapolis.

40. Dendritic Keratitis, by W. H. Wilder, Chicago.

Papers without title promised by T. Y. Sutphen, Newark, N. J., and E. G. Gardiner, Chicago.

AMERICAN OPHTHALMOLGICAL SOCIETY.

The twenty-ninth annual meeting of the American Ophthalmological Society will be held this year on Wednesday and Thursday, July 19 and 20, at the Fort Griswold House, New London. Yours very truly,

S. B. ST. JOHN, Secretary.

SELECTIONS.

TUBERCULAR IRITIS AND ITS TREATMENT.

G. E. DE SCHWEINITZ, M.D.

Tuberculosis of the iris, as generally described, occurs in the form of miliary growths (disseminated tuberculosis), or as a single neoplasm (solitary tubercle). The disseminated variety, consisting of the development of small grayish, translucent bodies, may be confounded, so far as its clinical characteristics are concerned, with nodular formations in the iris of non-tubercular origin,—the granulomata of some authors,—or with the deposits which have been occasionally seen in leukæmia, or have arisen under the inflammatory action caused by a foreign body entering the anterior chamber. Finally, it may be difficult to differentiate them from syphilitic papules, although the latter are crossed by blood-vessels, while in tubercles these are absent or but sparsely present.

The absolute diagnosis of tubercle of the iris would seem to depend upon bacteriological examinations and the demonstration of the bacilli characteristic of the disease, or upon inoculation experiments performed on rabbits' eyes. Some recent communications, however, maintain that the relation of tuberculosis to disease of the iris is much more common than we have been led to suppose, and the crucial test of finding the specific product of tubercle is not necessary to establish the identity of the disease, because in a number of instances, in the absence of the bacilli, the subsequent conduct of the affection, as well as general examination, have cleared away

all reasonable doubts as to the nature of the morbid process in the iris. At least one author is willing to ascribe a tubercular origin to many examples of chronic iritis, with moderate or severe inflammatory manifestations, accompanied by the depositions of precipitates on the posterior layer of the cornea.

Disregarding for the moment those cases which are of doubtful character, and returning to such forms, either disseminated or solitary, which with reasonable certainty may be diagnosticated as tubercular, the important problem for solution is the best method of treatment. Some years ago Dr. Hill Griffith ("Transactions of the Ophthalmological Society of the United Kingdom," vol. x, p. 84), with this point in view, analyzed thirty-two cases of tuberculosis of the iris gathered from the literature, some of which were recorded as primary, although the accuracy of this designation is not entirely free from objection, because, as Fuchs maintains, although tuberculosis experimentally induced in animals is primary, when it occurs in the iris of man it is usually secondary,—that is, it arises from a tuberculous focus elsewhere in the body; a focus, moreover, which may be found, for example, in the glands, or may be inferred to exist in the intestinal canal, lungs or bones. In Griffith's list there were three cases in which no operation was done, the first two dying of general miliary tuberculosis three and five weeks respectively after the onset of the eye-affection, and the third with symptoms of tubercular meningitis nine weeks after the beginning of the disease. Two cases, in spite of enucleation, died with symptoms of brain disease after the removal of the eye, but these are the only two deaths among twenty-seven cases in which the bulb was enucleated. Griffith further shows that iridectomy has not been productive of favorable results; in eight cases in which this operation was tried enucleation was required later on. Hence, it is evident that if an operation is to be undertaken for tubercular disease of the iris, which, as he expresses it, is justified when the eye is practically lost, when there is danger of sympathetic ophthalmitis, or when the affection is rapidly progressive, this

operation should consist of enucleation and not of iridectomy.

When it comes to dealing with cases in which the diagnosis is doubtful, or there is no tendency to speedy increase, or even if the nature of the malady is reasonably certain, the vision is not lost, and its manifestations are moderate, operation should be deferred and an expectant plan of treatment be pursued. Naturally the ordinary hygienic measures suited to tuberculosis suggest themselves; and among the medicinal agents, if the report of C. Quint (*Centralblatt f. prakt. Augenheilkunde*, March, 1893), is to be trusted, creosote should find a prominent place. This observer, who is of the opinion that many cases of chronic iritis are really tubercular in nature, reports two examples of probable tubercular iritis greatly benefitted by the exhibition of creosote. In the first case, lasting three-quarters of a year in spite of various remedies (mercury, iodide of potassium, and salicylic acid), an iridectemy was performed, and the excised piece of iris planted in the anterior chamber of a rabbit's eye, resulting in three weeks in typical iris tuberculosis. The patient was then placed upon creosote in pills, beginning with .3 gramme (5 grains), and later .75 gramme (12 grains), p. d. After the use of 10 grammes (150 grains) during two weeks, improvement began; four weeks later, 30 grammes (450 grains) having been taken, improvement was marked, and at the end of five months the eyes were quiet, and vision in R. $^1/_3$ and in L. 1. At the time of the report no relapse had taken place.

The second case, which occurred in a woman aged fifty-two years, presented appearances similar to the first one,—namely, yellowish deposits in the posterior layer of the cornea, which decidedly increased as time went on, moderate iritis, and, finally, intense streaky opacity of the cornea, the visual acuity sinking to the perception of the movements of the hand at three metres. The increase of the disease occurred in spite of the administration of mercury and other remedies. Therefore creosote was exhibited, and at the end of four weeks, during which time twenty-five grammes (375 grains) of the drug had been consumed, a very favorable change took place.

The eye was nearly free from irritation, the deposits thinner and diminished in number, and the blood-vessels shrunken. At the time of writing, three-quarters of a year after the beginning of the disease and one-half year after the creosote treatment had been begun, the eye had been for a long time free from inflammatory symptoms, and the acuity of sight had increased to $^{1}/_{IV}$.

The reporter attributes the favorable result in these two cases to the creosote. In one tubercular iritis was proven by the inoculation experiment; in the other Quint believes it undoubtedly to have been present, in spite of the absence of experimental or other exact evidence on account of the symptoms, which were closely analogous to those in his first case. He records the two cases and this experience with creosote in the hope that others may be induced to try the remedy, and may also report their results. In regard to the first case, if the inoculation experiment was carefully performed, there seems little doubt that the disease was truly tubercular, and as all manner of other remedies had first been tried and had failed, it is fair to attribute the success to the creosote. In the second case there may be reasonable doubt of the real tubercular nature of the malady, but none the less it also first showed evidence of improvement under the influence of creosote administrations, and this after other remedies had been faithfully tried. The use of this drug in pulmonary tuberculosis has attained a fair reputation, and consequently there is every reason to test its efficacy in those cases of iritis the clinical symptoms of which bring them into relation with tubercular disease.—*Therapeutic Gazette.*

TWO NEW OPERATIONS FOR OBSTRUCTION OF THE NASAL DUCT, WITH PRESERVATION OF THE CANALICULI, AND AN INCIDENTAL DESCRIPTION OF A NEW LACHRYMAL PROBE.

BY G. W. CALDWELL, M.D.,

Late Resident Surgeon, New Amsterdam Eye and Ear Hospital; Instructor in Ophthalmology and Assistant in Rhinology and Laryngology in the New York Polyclinic; Ophthalmic and Aural Surgeon to the Convent and School of the Sisters of St. Dominic

With the treatment by slitting a canaliculus and slow dilatation with probes, obstruction of the lachrymal duct is notoriously obstinate and painful. It has even been held by a prominent oculist that a perfect cure never occurs, and that in many cases the last condition is worse than the first. Recent studies have demonstrated the existence of circular and triangular muscular fibers about the canaliculi, which, assisted by the contractions of the orbicularis and the capillarity of the tubes, are sufficient to effect the normal drainage of the conjunctival sac. By slitting the canaliculus this physiological process is supplanted by a simple gravity drain, and drainage is never thereafter quite perfect, even if the nasal duct is dilated to such a size that were it a matter of simple drainage a gallon of tears might flow through in an hour. In health the capillary tubes of the canaliculi are sufficient to carry away the tears, yet if one of them is destroyed by slitting, it is usually thought necessary to dilate the nasal duct to many times its normal size in order to secure ony sort of drainage. It is reasonable to suppose that the preservation of normal function of the canaliculi is of far greater importance than an excessive capacity of the nasal duct. While it may be true that a few dry skulls have bony nasal ducts large enough to admit the larger

Theobald probes, it is certainly a fact that scarcely any membranous ducts can admit them; and forcing them through, as advised by Theobald, "even if it fractures the bony canal," must be considered barbarous to say the least. That many false passages are made, every oculist who also examines the nose will be ready to admit. Gentleness is imperative in dealing with all membranous canals. This is as true of the lachrymal ducts as of the urethra, although ill treatment may not be so dangerous to life. By bruising a congested nasal duct a functional stricture may be changed into an organic one, and to that extent rough treatment is worse than no treatment. Hæmorrhage from the nose should never follow simple probing of the nasal duct. Each time it occurs, another contracting cicatrix is added to the stricture.

Many slight cases of epiphora require only dilatation of the canaliculi up to No. 3 probe, with possibly its passage through the nasal duct from the upper canaliculus without slitting. Usually, however, it is necessary to reach the nasal duct with larger instruments than the canaliculus can admit. In order to avoid the destruction of the canaliculus, which has so important a function in the drainage of the conjunctival sac, and for other reasons which will be apparent, I have operated with gratifying results in the following manner: A small probe being passed through the upper canaliculus well into the sac and held in position by an assistant, the tissues at the inner canthus are made taut by pressure against the side of the nose, and a small incision is made from the inner extremity of the inner canthus inward and backward directly into the sac upon the probe. A suture should be taken through the wall of the sac and the inner margin of the wound, the ends being left long for traction to facilitate the entrance of instruments into the sac in the subsequent manipulations. The nasal duct may now be explored, and the caliber, length, character, and position of strictures determined by means of the probes which I will describe further on. A stricture being found, it should be divided at once by any narrow probe pointed knife. If the edge be made rather dull, its service can be better limited to

the stricture. Two or three nicks are better than one deeper cut. Dilatation is carried directly up to No. 12 if the duct will admit it with gentle pressure, and the duct irrigated with antiseptic solution, as boric acid. If the stricture is slight, the sac may be allowed to close at once; if not, the wound should be prevented from closing by the insertion of an obturator made of a fragment of rubber tissue, while the stricture is dilated every three or four days until the wound in the duct has healed, when the sac wound may be freshened and closed by catgut sutures. The operation is done without pain under cocaine, a few minims of a four-per-cent solution being injected into the point in the inner canthus where the incision is to be made and used freely in the duct. In a few cases, when the inferior turbinated is small and high, it is possible to explore and dilate the nasal duct by way of the lower opening in the inferior meatus of the nose.

The probe referred to above is made according to my design by Tiemann & Co., and consists of a wire staff eleven centimetres in length, with a central plate for convenience in handling. On each end is a bullet-shaped tip one centimetre long, with conical point, parallel sides, and abrupt shoulder. The tips are graded in size, as are Theobald's probes, in successive numbers, each unit of which represents one quarter millimetre of diameter. The shoulders are intended to emphasize the qualities of an obstruction, while the length is sufficient to allow it to be retracted into and held by a stricture for the purpose of dilatation. A complete set comprises seven double-ended probes numbered from 1, the staff alone, to No. 14, the largest size. The advantages which I assert for this probe are that, while for the purpose of dilatation it possesses all the essential properties of Bowman's or Theobald's, it also affords the additional advantage that with it a diagnosis of the location, length (allowance being made for the length of the tip), caliber, and character or an obstruction may be accurately made. The small size of the staff avoids traction at the inner canthus and thereby lessens the pain. The entrance of the probe into the open space between the inferior turbinated

body and the outer wall is immediately indicated indicated by the loss of resistance. It is not, therefore, necessary to carry it to the floor of the nose to be assured it is in the nasal space.

In preparing wet anatomical specimens I have observed that not infrequently the inferior turbinated body rolls upon itself in such a manner as to be in the course of a probe projected through the nasal duct. When we remember that the nasal duct is only a half to three quarters of an inch in length, the reasonable suspicion must arise that this anatomical arrangement may possibly account for some of those "very firm strictures which are occasionally encountered at the lower extremity of the duct," to overcome which probes of such extraordinary strength and length have been advised. In other cases the antral wall encroaches so far on the nasal space that an ordinary probe in its downward course impinges upon the outer wall at an acute angle, when, if the force is continued, the periosteum is lacerated and pockets are formed, which complicate the case. These accidents can hardly occur in the use of this probe, as its escape from the duct is immediately indicated, and we need not be seriously concerned about what the probe may encounter farther down. The accompanying sketch gives a fair representation of the instrument.

In those cases where, in spite of or on account of the long-continued passage of tremendous probes, the duct has become hopelessly closed by fibrous or bony growths, and in fractures, caries, and persistent dacryocystitis, and in all cases in which obliteration of the sac is usually practiced, it will be found that by tapping the nasal duct in the middle meatus the function of the tear duct may be preserved. This is best done by the electric burr after passing a probe into the duct as far as the stricture. The opening should be made at the seat of stricture as indicated by measurements, and enlarged upward as far as necessary. In the two cases of bony closure in which I have employed this operation a complete cure has resulted. The operation is so evidently preferable to ablation or obliteration of the sac that no argument is necessary in its support. —*N. Y. Med. Jour.*